Curriculum S. 12C Supplement (1971)

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DEPARTMENT OF EDUCATION

MATHEMATICS

Grade 13

Three single-credit courses based on the contents of Curriculum S. 12C

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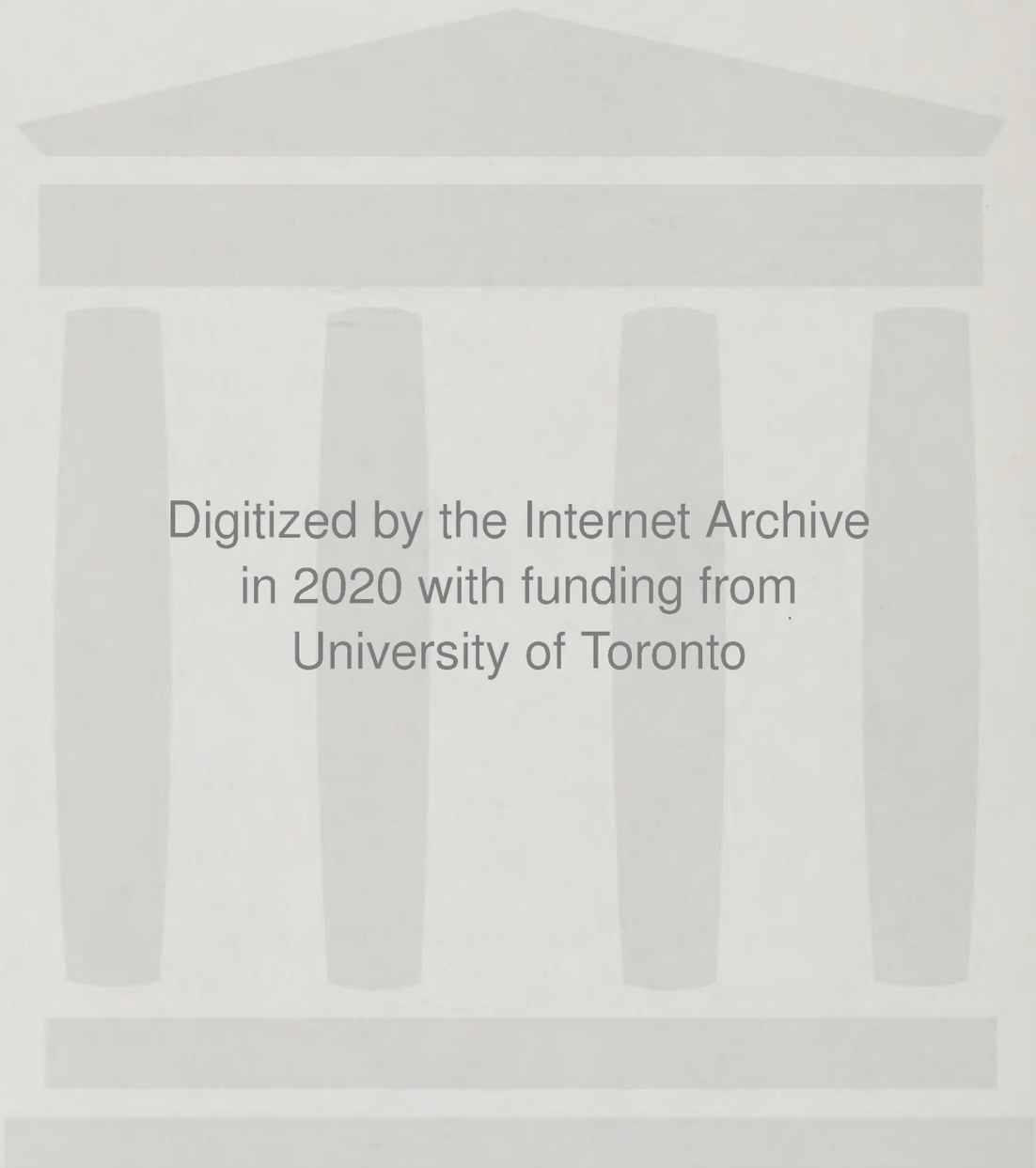

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MATHEMATICS

Grade 13

This supplement to Curriculum S.12C, Grade 13 Mathematics, provides a plan for the reorganization of the contents of Curriculum S.12C into three single-credit courses, identified as *Relations and Functions*, *Calculus*, and *Algebra*.

Many schools recently have recognized advantages in such a reorganization and the courses that follow reflect the most common features of the plans begun in these schools. The outlines indicate the titles of the units for each course with cross-references given to the corresponding units in Curriculum S.12C. Some local adaptation may be necessary in order that the program offered to students will take into account their earlier experiences in mathematics along with their plans for the future. However, the level of scholarship and depth of treatment presently associated with Grade 13 mathematics should be maintained.

Certain aspects of topics such as logic, complex numbers, polar coordinates, matrices, groups, and the binomial theorem are related to the contents of more than one of these courses. Final plans for including these topics in the program should be made in the schools in such a way that repetition of content is avoided in the three courses. Although the *Calculus* course does not contain direct reference to optional material, it may be desirable for some students to include applications of the binomial theorem, angular velocity, a more formal study of limits and integration, and a broader range of problems.

FUNCTIONS AND RELATIONS

CORE

UNIT 1 FUNCTION AS A MAPPING
(S.12C, Unit 2 of Mathematics A)

UNIT 2 SECOND DEGREE RELATIONS IN THE PLANE
(S.12C, Unit 3 of Mathematics A)

UNIT 3 TRIGONOMETRY
(S.12C, Unit 4 of Mathematics A)

UNIT 4 TRANSFORMATIONS IN THE PLANE
(S.12C, Unit 5 of Mathematics A)

OPTIONS

UNIT 5 MATRICES AND TRANSFORMATIONS
(S.12C, Parts of Units 7 and 9 of Mathematics B related to Unit 4 above)

UNIT 6 COMPLEX NUMBERS AND POLAR CO-ORDINATES
(S.12C, Part of Unit 8 of Mathematics B)

UNIT 7 LOGICAL REASONING
(S.12C, Unit 1 of Mathematics A)

UNIT 8 MATHEMATICS OF INVESTMENT

UNIT 9 STATISTICS AND PROBABILITY (an intuitive approach)

CALCULUS

UNIT 1 SLOPES AND SIMPLE DERIVATIVES
(S.12C, Unit 6 of Mathematics A)

UNIT 2 APPLICATIONS OF DIFFERENTIATION
(S.12C, Unit 7 of Mathematics A)

UNIT 3 EQUATIONS OF THE FORM $D_x y = f(x)$
(S.12C, Unit 8 of Mathematics A)

UNIT 4 COMPLEX NUMBERS AND POLAR COORDINATES
(S.12C, Part of Unit 8 of Mathematics B)

ALGEBRA

CORE

UNIT 1 SETS, SUBSETS, AND PERMUTATIONS
(S.12C, Unit 1 of Mathematics B)

UNIT 2 MATHEMATICAL INDUCTION AND THE BINOMIAL THEOREM
(S.12C, Unit 2 of Mathematics B)

UNIT 3 VECTORS
(S.12C, Unit 4 of Mathematics B)

UNIT 4 EQUATIONS OF LINES AND PLANES
(S.12C, Unit 5 of Mathematics B)

UNIT 5 SYSTEMS OF LINEAR EQUATIONS
(S.12C, Unit 6 of Mathematics B)

OPTIONS

UNIT 6 MATRICES AND LINEAR TRANSFORMATIONS
(S.12C, Unit 7 of Mathematics B)

UNIT 7 COMPLEX NUMBERS AND POLAR COORDINATES
(S.12C, Part of Unit 8 of Mathematics B)

UNIT 8 EXAMPLES OF GROUPS
(S.12C, Unit 9 of Mathematics B)

UNIT 9 PROBABILITY
(S.12C, Unit 3 of Mathematics B)

UNIT 10 LOGICAL REASONING
(S.12C, Unit 1 of Mathematics A)